

REMARKS

In the application, Claims 1, 16-21, 24-28, 35 and 37-41 are pending and rejected. The rejections raised in the Office Action of December 1, 2004 have been considered and comments are provided below. It is submitted that the claims now presented are in a condition for allowance and the Examiner is requested to reconsider the claims and issue a notice of allowance.

Final Rejection

In paragraph 1 of the December 1, 2004 Office Action, the Examiner states that Applicant's arguments filed on August 30, 2004 have been fully considered but are not deemed persuasive, but in contradiction of this statement, paragraph 6 of the same Office Action states that the rejections directed to Eckman et al. and Schena et al. have been withdrawn. In fact, the rejections directed to Eckman et al. and Schena et al. were the *only* rejections asserted in the February 25, 2004 Office Action, meaning that Applicant's response had successfully overcome all grounds of rejection. No prior grounds of rejection have been reiterated. The sole ground for rejection in the Office Action is new.

The prior art reference upon which the present rejection is based, Ermolaeva et al., was listed in Applicant's Information Disclosure Statement filed on September 9, 2002, and thus, has been before the Examiner in three prior office actions (2/26/03, 1'0/29/03, and 2/25/04), yet has never been indicated by the Examiner as providing any grounds for rejection of the claims. As a result, Applicant has not been afforded an opportunity to address and distinguish the reference from the claimed invention. The Examiner states that Applicant's amendments necessitated the new grounds of rejection, however, the newly-cited reference is relied on for its teaching of elements that were also disclosed by Eckman et al., including the use of a relational database, extraction of data from UniGene, and a web-based user interface. As Applicant had successfully overcome the prior rejection over Eckman, et al., it is not apparent how the amendments could have necessitated a new rejection over a new reference with the same teachings as the reference that had been distinguished. Accordingly, Applicant respectfully suggests that the final rejection is premature, and requests that the finality of the rejection be withdrawn and that the claims be reconsidered in view of the following comments.

Amendments to the Specification and Claims

Minor amendments have been made to correct typographical errors in the specification and to conform the claim language more closely to the terminology used in the written description. No new matter is added by these amendments.

Rejection under 35 U.S.C. §102

The Examiner rejects Claims 1, 16-21, 24-28, 35 and 37-41 under 35 U.S.C. §102(b) as being clearly anticipated by Ermolaeva et al.

While Ermolaeva et al. teach a method for data management and analysis of gene expression data, they do not teach the use of separate databases for separately storing different categories of data as claimed by Applicant. The relational database of Ermolaeva et al. (ArrayDB) is a single database. "Relational database" is defined in attached Exhibit A, which includes an article entitled "Introduction to Relational Databases", published June 24, 2002 in *Database Journal*, available on the World Wide Web at databasejournal.com, and printouts from two Internet dictionaries: dictionary.net and dict.die.net. Relevant portions are highlighted. Each reference provides the same definition, that a relational database is a collection of tables. The ArrayDB, which is described by Ermolaeva et al. as "an industry standard relational database management system" (page 20, 2nd column, line 6), fits clearly within this definition. A table is not a database, only part of a database. Tables are collections of records arranged in rows and columns. Thus, Ermolaeva et al. does not teach multiple distinct databases; only a single relational database with multiple tables. Accordingly, Ermolaeva et al. cannot anticipate a data management system that uses multiple databases for separately storing each of gene expression data, gene annotation data and sample data as claimed by Applicant.

The Examiner alleges that the limitation of "separate databases" has not been specifically defined in the instant specification. Applicant respectfully disagrees, referring the Examiner to Figure 7, which clearly illustrates separate (multiple) databases for gene expression (EPIKS Gene Expression and GX (GATC) Gene Expression, sample data (Extended Sample Database) and gene fragment index (Extended GX Index (Gene Annotations and Gene Sequences)). Use of the sample (clinical) database for sample set searches is described, for

example, at page 41, sixth paragraph. The use of the gene fragment index database for gene set searches is described at page 22, first paragraph and page 46, fifth paragraph.

The use of a single database limits the scope and flexibility of a search using the Ermolaeva et al. system compared with Applicant's system and method. As such, the three separate databases are an important aspect of Applicant's invention that is not disclosed by Ermolaeva et al.

Ermolaeva et al. further fails as prior art under §102(b) in that it does not teach creating a plurality of links between separate databases as does Applicant's invention. Instead, Ermolaeva et al. teach a standard relational database with internal links between tables.

Ermolaeva et al. also fails to teach a sample database with clinical data and information about the source (organ, tissue, disease, pathology, etc.) The Examiner points to the CALC_INTENSITIES tables within the ArrayDB as containing sample data, however, as mentioned above, these tables are not separate databases, but subparts of a single relational database. Furthermore, the data provided in the table are merely numeral values derived from the measured intensity data. For example, "Sample_mean_R" and "Sample_mean_G" are both numeral values with floating decimals referring to the calculated mean of intensity levels measured from red and green hybridization probes, respectively, for a given sample. The "Sample_size_R" and "Sample_size_G" are integers referring to the respective quantities of red and green probes for a given sample. This data corresponds to values calculated from the gene expression data in the gene expression database of the present invention. There is nothing in the relational database of Ermolaeva et al. that corresponds to the information contained in the separate sample (clinical) database taught by Applicant.

Ermolaeva et al. teaches queries that include fields such as clone ID, title, experiment number, accession number, microtiter plate number and sequence similarity (page 21, 1st col., 2nd and 3rd paragraphs) and, from the histogram viewer, three basic queries: 1) confidence value; 2) expression ratio; and 3) image of the hybridization array (page 22, 1st col., 2nd paragraph). Suggested optional filters can search for minimum intensity, maximum intensity, minimum size, or keyword. Nothing in Ermolaeva et al. teaches or suggests the ability to query by any of a group of attributes including sample (clinical) data, gene fragment index (annotation data), experiment data and expression results. Basically, Ermolaeva et al. queries

consisting of gene index and expression results alone. Accordingly, the Ermolaeva et al. lacks the flexibility of Applicant's invention.

For the foregoing reasons, the Ermolaeva et al. reference does not teach each and every element and, therefore, cannot anticipate Applicant's invention as now claimed. Accordingly, Applicant respectfully requests that the Examiner withdraw the rejection under §102(b).


Conclusion

In view of the foregoing amendments and remarks, Applicant submit that all bases for rejection have been addressed and overcome such that the amended claims are allowable over the prior art. Accordingly, Applicant respectfully requests that the Examiner withdraw all rejections set forth in the Office Action and issue a notice of allowance for all claims now in the application.

Should the Examiner believe that prosecution of this application might be expedited by further discussion of the issues, he is invited to telephone the undersigned attorney for Applicant at the telephone number indicated below.

Respectfully submitted,

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